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REMARKS

Applicants appreciate the Office's review of the present application. In response to the Office Action, the cited references have been reviewed, and the rejections and objections made to the claims by the Examiner have been considered. The claims presently on file in the present application are believed to be patentably distinguishable over the cited references, and therefore allowance of these claims is earnestly solicited.

In order to render the claims more clear and definite, and to emphasize the patentable novelty thereof, claims 12, 14, 19, 27, 33-34, and 37-38 have been amended, and claims 24-25 have been cancelled without prejudice. Support for any claim amendments and new claims is found in the specification, claims, and drawings as originally filed, and no new matter has been added. Accordingly, all claims presently on file in the subject application are in condition for immediate allowance, and such action is respectfully requested.

Rejections**Rejection Under 35USC §103**

Claim 12 has been rejected under 35 USC §103(a), as being unpatentable over U.S. patent 6,540,316 to Imanaka ("Imanaka") in view of U.S. patent 6,808,243 to Markham et al. ("Markham"). Applicants respectfully traverse the rejection and request reconsideration.

As to a rejection under §103(a), the U.S. Patent and Trademark Office ("USPTO") has the burden under §103 to establish a *prima facie* case of obviousness by showing some objective teaching in the prior art or generally available knowledge of one of ordinary skill in the art that would lead that individual to the claimed invention. See In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Manual of Patent Examining Procedure (MPEP) section 2143 discusses the requirements of a *prima facie* case for obviousness. That section provides as

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follows:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and reasonable expectation of success must be found in the prior art, and not based on applicant's disclosure.

The rejection of independent claim 12 is respectfully traversed for at least the following reasons. Claim 12 recites:

"12. (Currently amended) A printing system, comprising:
a printhead having plural portions each having an ink-ejecting nozzle located therein;
plural temperature sensors each associated with one of said plural portions to monitor the temperature thereof;
plural heating elements, each associated with one of said plural portions to apply heat thereto in response to a pre-warming signal; and
a controller configured to generate separate pre-warming signals for each of the plural heating elements in response to the plural temperature sensors to elevate the temperature of at least one of said plural portions to a pre-warming temperature, wherein:
the controller is configured to analyze which plural portions are required to eject ink during a print swath;
the controller is configured to continue to generate pre-warming signals for the required plural portions after printing of said print swath has begun; and
while printing said print swath, after ink ejection from one of said plural portions is no longer required to complete said print swath, the controller is configured to cease to generate a pre-warming signal therefor." (emphasis added)

The Office has not established a *prima facie* case of obviousness at least because the applied references do not teach or suggest all of Applicant's claim limitations.

With regard to the limitation of the controller being configured to cease to generate a pre-warming signal for a plural portion that is no longer required to complete a print swath, the Office admits that the Imanaka reference does not teach such a limitation, but takes the position

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that the Markham reference teaches such a limitation at col. 3, lines 13-18 and 21-30 (Office Action, p.3).

Applicants respectfully disagree. The Markham reference discloses "an ink jet printhead having a temperature range over which the volume of the ejected ink droplets may be controlled during a printing swath of the printhead, while avoiding abrupt changes in the prepulses" (col. 2; lines 30-35). "The purpose of the ... pre-pulse is to preheat the ink near the heating elements to provide additional energy to the bubble when it nucleates during the main pulse" (col. 1, lines 47-50). "It is possible that abrupt changes in the pre-pulse or pulses applied during a print swath may cause visible artifacts in the print. It is an object of this invention to limit the occurrence of abrupt switching of the enable train during a print swath" (col. 2, lines 23-28; emphasis added). This is done in the Markham reference "by blending application of sequential pulse trains and thereby providing an averaging of the heat increment applied" (col. 2, lines 36-38). More particularly, the Markham reference teaches "applying a pulse train to a selected heating element as required by the sensed printhead temperature during a printhead swath, blending the applied enable train by alternating one enable train with another enable train to provide an average temperature increment during a print swath. The blending sequence may end after a print swath is complete and then the temperature control sequence may start over" (col. 2, lines 49-62; emphasis added). Thus the Markham reference teaches printhead pre-warming operation that avoids any abrupt changes during the printing of a print swath, ending only after printing of the print swath is complete.

Conversely, claim 12 recites that, while printing the print swath, the controller is configured to cease to generate a pre-warming signal for one of the plural ink-ejecting portions of the printhead. Ceasing to generate this pre-warming signal during the printing of the print swath constitutes an abrupt change (i.e. a transition from pre-warming to no pre-warming). Thus, the Markham reference teaches the opposite of this limitation of claim 12.

Therefore, for the reasons discussed herein, the applied references do not teach or suggest all of Applicants' claim limitations, and thus the rejection is improper at least for this reason and

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should be withdrawn.

Furthermore, the Office has not established a *prima facie* case of obviousness at least because there is no articulated reason with some rational underpinning that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. In Re Kahn, 441 F.3d, 977, 988 (CA Fed. 2006). Such a combination would not have been suggested to a person of ordinary skill in the art in that the Markham reference teaches away from modifying the Imanaka reference in the manner recited in claim 12. The Markham reference teaches that “[i]t is possible that abrupt changes in the pre-pulse or pulses applied during a print swath may cause visible artifacts in the print” (col. 2, lines 23-25). In light of this, one of ordinary skill would have concluded that abrupt changes to the pre-warming pulses while printing a particular print swath are to be avoided, and therefore would not have been prompted to cease generating the pre-warming pulse while printing a print swath, as recited in claim 12. Such would be possible only by impermissibly using the Applicants’ disclosure as a blueprint or in hindsight for the rejection. Therefore, because the Office has not provided an articulated reason with some rational underpinning to combine the prior art elements in the manner claimed, it is improper to combine the Markham and Imanaka references and the rejection under 103(a) should be withdrawn.

Applicants respectfully traverse the Office’s assertion that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the features recited in the claims of Applicants’ invention. Such could be possible only in hindsight and in light of Applicants’ teachings. Therefore, the rejection is improper at least for this reason and should be withdrawn.

Claims 14, 16, 18-19, and 37-39 have been rejected under 35 USC §103(a), as being unpatentable over U.S. patent 6,808,243 to Markham et al. (“Markham”) in view of U.S. patent 6,634,735 to Silverbrook (“Silverbrook”) Applicants respectfully traverse the rejection and

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request reconsideration.

The rejection of independent claim 14, and its dependent claims 16, 18, and 39, is respectfully traversed for at least the following reasons. Claim 14 recites:

“14. (Currently amended) A method of pre-warming a multi-color inkjet printhead, comprising:
providing plural ink-dispensing portions in the printhead, each of the plural portions comprising a predetermined plurality of ink ejection elements all configured to eject a particular color ink having a particular dye-load;
analyzing an upcoming print swath;
determining from said analyzing which of said plural portions are a dispensing portion required to dispense ink, and which of said plural portions are a non-dispensing portion not required to dispense ink during printing of said upcoming print swath;
generating a pre-warming signal for said dispensing portion;
pre-warming said dispensing portion in response to the pre-warming signal; and
omitting generation of a pre-warming signal for said non-dispensing portion to produce no pre-warming thereof,
wherein the pre-warming signal to the dispensing portion is generated in accordance with a predefined selection criteria that specifies an event after which the pre-warming signal ceases.”
(emphasis added)

The Office has not established a *prima facie* case of obviousness at least because the applied references do not teach or suggest all of Applicants' claim limitations.

With regard to the limitation of plural ink-dispensing portions of the printhead, the Office apparently refers to col. 3, lines 7-13 of the Markham reference (Office Action, 4). In this regard, the reference discloses that “[t]he printhead includes: a temperature sensor; a power supply; and a control circuit for applying a plurality of non-nucleating electrical pre-pulses to selected heating elements in response to data signals received and a nucleating electrical pulse to the selected heating elements subsequent to the pre-pulses to eject ink droplets from the printhead nozzles” (col. 3, lines 7-13; emphasis added). Similarly, the Office states “[a]lthough Markham et al. (243') does not explicitly teach omitting generation of a pre-warming signal for said non-dispensing portion to produce no pre-warming thereof, Markham et al. (243') does teach the generation of a pre-warming signal for the heating element/dispensing portion selected by the controller in response [to] data signals received” (Office Action, p.5; emphasis added). Thus, the

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Office appears to equate an ink-dispensing portion to a single heating element, and takes the position that the ink-dispensing portions are defined by the data in the print swath.

Claim 14, as amended, recites that each plural ink-dispensing portion comprises a plurality of ink ejection elements all configured to eject a particular color ink having a particular dye-load. In addition, claim 14 also recites that the plurality of ink ejection elements in the portion are predetermined, rather than being somehow defined dynamically in response to the data in the upcoming print swath.

The Office does not cite the Silverbrook reference as teaching or suggesting plural portions, and it is believed that the Silverbrook reference does not teach or suggest the limitations of the providing step in claim 14.

Therefore, for the reasons discussed herein, the applied references do not teach or suggest all of Applicants' claim limitations, and thus the rejection is improper at least for this reason and should be withdrawn.

Applicants respectfully traverse the Office's assertion that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the features recited in the claims of Applicants' invention. Such could be possible only in hindsight and in light of Applicants' teachings. Therefore, the rejection is improper at least for this reason and should be withdrawn.

The rejection of claim 19 (rewritten in independent form herein) is respectfully traversed for at least the following reasons. Claim 19 recites:

"19. (Currently amended) A method of pre-warming a multi-color inkjet printhead having plural portions dispensing ink, comprising:
analyzing an upcoming print swath;
determining from said analyzing which of said plural portions are a dispensing portion required to dispense ink, and which of said plural portions are a non-dispensing portion not required to dispense ink during printing of said upcoming print swath;
generating a pre-warming signal for said dispensing portion;
pre-warming said dispensing portion in response to the pre-warming signal;

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omitting generation of a pre-warming signal for said non-dispensing portion to produce no pre-warming thereof;

printing a print swath from a beginning point to an ending point;
continuing generation of the pre-warming signal after printing from the beginning point;
monitoring printing temperature of each of said plural portions during said printing; and
ceasing to generate the pre-warming signal when the printing temperature exceeds a threshold temperature before printing to the ending point.” (emphasis added)

The Office has not established a *prima facie* case of obviousness at least because the applied references do not teach or suggest all of Applicants' claim limitations.

The Office admits that the Markham reference does not teach printing a print swath from a beginning point to an ending point, nor the limitations of the continuing, monitoring, and ceasing steps (Office Action, p.7). However, the Office states that the Silverbrook reference teaches these limitations at col. 8, lines 51-59 and col. 9, lines 9-23 (Office Action, p.7).

Applicants respectfully disagree. First, there is no disclosure in the cited portions of the Silverbrook reference of printing a print swath at all, much less from a beginning point to an ending point. It follows that there can be no correlation established between a point in the swath (after the beginning point, and before the ending point) and a time at which generation of a pre-warming signal ceases, as recited by the continuing and ceasing steps of claim 19.

Second, the Silverbrook reference does not teach that generation of the pre-warming signal is continued during printing of a print swath from the beginning point, as recited by the printing and continuing steps of claim 19; rather it teaches the opposite, that generation of the pre-warming signal ceases before printing begins, as can be understood from Figs. 15-16. “FIG. 16 illustrates an example graph of the print head temperature during a printing operation. Assuming the print head has been idle for a substantial period of time, the print head temperature, initially 115, will be the ambient temperature. When it is desired to print, a preheating step (104 of FIG. 12) is executed such that the temperature rises as shown at 116 to an operational temperature T2 at 117, at which point printing can begin and the temperature left to fluctuate in accordance with usage requirements” (col. 9, lines 9-18; emphasis added). It can be seen in Figs. 15-16 that there is a steady rise in printhead temperature during the preheating

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portion of the graph, but not during the printing portion of the graph, indicative that generation of the pre-warming signal ceases before printing begins.

Therefore, for the reasons discussed herein, the applied references do not teach or suggest all of Applicants' claim limitations, and thus the rejection is improper at least for this reason and should be withdrawn.

Furthermore, the Office has not established a *prima facie* case of obviousness at least because there is no articulated reason with some rational underpinning that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. In Re Kahn, 441 F.3d, 977, 988 (CA Fed. 2006). Such a combination would not have been suggested to a person of ordinary skill in the art in that the Markham reference teaches away from modification by the Silverbrook reference in the manner recited in claim 19. The Markham reference teaches that "[i]t is possible that abrupt changes in the pre-pulse or pulses applied during a print swath may cause visible artifacts in the print" (col. 2, lines 23-25). In light of this, one of ordinary skill would have concluded that abrupt changes to the pre-warming pulses while printing a particular print swath are to be avoided, and therefore would not have been prompted to cease generating the pre-warming pulse during printing of a print swath when the printing temperature exceeds a threshold temperature before printing to the ending point of the swath, as recited in claim 19. Such would be possible only by impermissibly using the Applicants' disclosure as a blueprint or in hindsight for the rejection. Therefore, because the Office has not provided an articulated reason with some rational underpinning to combine the prior art elements in the manner claimed, it is improper to combine the Markham and Silverbrook references and the rejection under 103(a) should be withdrawn.

Applicants respectfully traverse the Office's assertion that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the features recited in the claims of Applicants' invention. Such could be possible only in hindsight and in light of Applicants' teachings. Therefore, the rejection is improper at least for this reason and

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should be withdrawn.

The rejection of claim 37 (rewritten in independent form herein) is respectfully traversed for at least the following reasons. Claim 37 recites:

"37. (Currently amended) A method of pre-warming a multi-color inkjet printhead having plural portions dispensing ink, comprising:
analyzing an upcoming print swath;
determining from said analyzing which of said plural portions are a dispensing portion required to dispense ink, and which of said plural portions are a non-dispensing portion not required to dispense ink during printing of said upcoming print swath;
generating a pre-warming signal for said dispensing portion;
pre-warming said dispensing portion in response to the pre-warming signal;
omitting generation of a pre-warming signal for said non-dispensing portion to produce no pre-warming thereof;
beginning printing of a print swath having a plurality of segments; and
ceasing generation of the pre-warming signal for a particular dispensing portion during printing of a final segment of the print swath." (emphasis added)

The Office has not established a *prima facie* case of obviousness at least because the applied references do not teach or suggest all of Applicants' claim limitations.

The Office states that the Markham reference teaches the limitations of the beginning and ceasing steps (Office Action, p.8). Applicants respectfully disagree, for similar reasons as have been explained heretofore with regard to claim 12. The Markham reference teaches printhead pre-warming operation that avoids any abrupt changes in pre-warming during the printing of a print swath. Ceasing generation of the pre-warming signal for a particular dispensing portion of the printhead during printing of a final segment of the print swath constitutes such an abrupt change (i.e. a transition from pre-warming to no pre-warming). Thus, the Markham reference teaches the opposite of this limitation of claim 37.

The Office does not take the position that the Silverbrook reference teaches any of these limitations, and it is believed that the reference does not teach those limitations.

Therefore, for the reasons discussed herein, the applied references do not teach or suggest all of Applicants' claim limitations, and thus the rejection is improper at least for this reason and

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should be withdrawn.

Furthermore, the Office has not established a *prima facie* case of obviousness at least because there is no articulated reason with some rational underpinning that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. For similar reasons as have been explained heretofore with regard to claim 12, the Markham reference teaches away from modification in such a manner as to cease generation of the pre-warming signal during printing of a print swath, as recited in claim 37. Such modification would be obvious only by impermissibly using the Applicants' disclosure as a blueprint or in hindsight for the rejection. Therefore, because the Office has not provided an articulated reason with some rational underpinning to combine the prior art elements in the manner claimed, it is improper to modify the Markham reference or combine the Silverbrook reference, and the rejection under 103(a) should be withdrawn.

Applicants respectfully traverse the Office's assertion that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the features recited in the claims of Applicants' invention. Such could be possible only in hindsight and in light of Applicants' teachings. Therefore, the rejection is improper at least for this reason and should be withdrawn.

The rejection of claim 38 (rewritten in independent form herein) is respectfully traversed for at least the following reasons. Claim 38 recites:

"38. (Currently amended) A method of pre-warming a multi-color inkjet printhead having plural portions dispensing ink, comprising:
analyzing an upcoming print swath;
determining from said analyzing which of said plural portions are a dispensing portion required to dispense ink, and which of said plural portions are a non-dispensing portion not required to dispense ink during printing of said upcoming print swath;
generating a pre-warming signal for said dispensing portion;
pre-warming said dispensing portion in response to the pre-warming signal;
omitting generation of a pre-warming signal for said non-dispensing portion to produce

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no pre-warming thereof;

beginning printing of a print swath; and
ceasing generation of the pre-warming signal for a particular dispensing portion during
printing of the print swath after ink dispensing from the particular dispensing portion is concluded
for the print swath.” (emphasis added)

The Office has not established a *prima facie* case of obviousness at least because the applied references do not teach or suggest all of Applicants' claim limitations.

The Office states that the Markham reference teaches the limitations of the beginning and ceasing steps (Office Action, p.8). Applicants respectfully disagree, for similar reasons as have been explained heretofore with regard to claim 12. The Markham reference teaches printhead pre-warming operation that avoids any abrupt changes in pre-warming during the printing of a print swath. Ceasing generation of the pre-warming signal for a particular dispensing portion of the printhead during printing the print swath constitutes such an abrupt change (i.e. a transition from pre-warming to no pre-warming). Thus, the Markham reference teaches the opposite of this limitation of claim 38.

The Office does not take the position that the Silverbrook reference teaches any of these limitations, and it is believed that the reference does not teach these limitations.

Therefore, for the reasons discussed herein, the applied references do not teach or suggest all of Applicants' claim limitations, and thus the rejection is improper at least for this reason and should be withdrawn.

Furthermore, the Office has not established a *prima facie* case of obviousness at least because there is no articulated reason with some rational underpinning that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. For similar reasons as have been explained heretofore with regard to claim 12, the Markham reference teaches away from modification in such a manner as to cease generation of the pre-warming signal during printing of a print swath, as recited in claim 38. Such modification would be obvious only by impermissibly using the Applicants' disclosure as a blueprint or in hindsight for the rejection. Therefore, because the Office has not provided an

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articulated reason with some rational underpinning to combine the prior art elements in the manner claimed, it is improper to modify the Markham reference or combine the Silverbrook reference, and the rejection under 103(a) should be withdrawn.

Applicants respectfully traverse the Office's assertion that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the features recited in the claims of Applicants' invention. Such could be possible only in hindsight and in light of Applicants' teachings. Therefore, the rejection is improper at least for this reason and should be withdrawn.

Claim 20 has been rejected under 35 USC §103(a), as being unpatentable over U.S. patent application publication 2002/0018086 to Kao et al. ("Kao") in view of U.S. patent 5,984,455 to Anderson ("Anderson") and U.S. patent 6,808,243 to Markham et al. ("Markham"). Applicants respectfully traverse the rejection and request reconsideration.

The rejection of independent claim 20 is respectfully traversed for at least the following reasons. Claim 20 recites:

"20. (Previously presented) A method of pre-warming a multi-color inkjet printhead having plural portions dispensing ink, including first and second portions, comprising:
generating a pre-warming signal for said first portion;
pre-warming said first portion in response to the pre-warming signal;
omitting generation of a pre-warming signal for said second portion to produce no pre-warming thereof.
analyzing an upcoming print swath;
determining from said analyzing which of said plural portions are transitional portions required to dispense ink over an initial segment of said upcoming print swath, and not required to dispense ink over a final segment of said upcoming print swath; and
from said determining, continuing generation of the pre-warming signal for said transitional portions during printing of the initial segment and ceasing generation of the pre-warming signal during printing of the final segment." (emphasis added)

The Office has not established a *prima facie* case of obviousness at least because the applied references do not teach or suggest all of Applicants' claim limitations.

With regard to the continuing generation and ceasing generation steps, the Office admits

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that the Kao and Anderson references do not teach these limitations, but takes the position that the Markham reference teaches these limitations. Applicants respectfully disagree, for similar reasons as have been explained heretofore with regard to claim 12. The Markham reference teaches printhead pre-warming operation that avoids any abrupt changes in pre-warming during the printing of the various segments of a print swath. Ceasing generation of the pre-warming signal during printing of the final segment of the print swath constitutes such an abrupt change (i.e. a transition from pre-warming to no pre-warming). Thus, the Markham reference teaches the opposite of this limitation of claim 20.

Therefore, for the reasons discussed herein, the applied references do not teach or suggest all of Applicants' claim limitations, and thus the rejection is improper at least for this reason and should be withdrawn.

Furthermore, the Office has not established a *prima facie* case of obviousness at least because there is no articulated reason with some rational underpinning that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. For similar reasons as have been explained heretofore with regard to claim 12, the Markham reference teaches away from modifying the Kao and Anderson references in the manner recited in claim 20. Such modification would be obvious only by impermissibly using the Applicants' disclosure as a blueprint or in hindsight for the rejection. Therefore, because the Office has not provided an articulated reason with some rational underpinning to combine the prior art elements in the manner claimed, it is improper to combine the Kao, Anderson, and Markham references, and the rejection under 103(a) should be withdrawn.

Applicants respectfully traverse the Office's assertion that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the features recited in the claims of Applicants' invention. Such could be possible only in hindsight and in light of Applicants' teachings. Therefore, the rejection is improper at least for this reason and should be withdrawn.

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Claim 27 has been rejected under 35 USC §103(a), as being unpatentable over U.S. patent application publication 2002/0018086 to Kao et al. ("Kao") in view of U.S. patent 5,984,455 to Anderson ("Anderson") and U.S. patent 6,808,243 to Markham et al. ("Markham"). Applicants respectfully traverse the rejection and request reconsideration.

The rejection of independent claim 27 is respectfully traversed for at least the following reasons. Claim 27 recites:

"27. (Currently amended) A printing system, comprising:
means for ejecting ink from plural portions of an inkjet printhead;
means for heating each of said plural portions in response to a pre-warming signal;
means for generating the pre-warming signal for one of said plural portions;
means for omitting generation of the pre-warming signal for another of said plural portions;
means for determining when said one of said plural portions is required to print during an initial segment of a print swath and is not required to print during a final segment of the print swath; and
means for ceasing generation of the pre-warming signal during printing of the print swath after printing said initial segment." (emphasis added)

The Office has not established a *prima facie* case of obviousness at least because the applied references do not teach or suggest all of Applicants' claim limitations.

With regard to the means for ceasing generation, the Office admits that the Kao and Anderson references do not teach this limitation, but takes the position that the Markham reference teaches this limitation. Applicants respectfully disagree, for similar reasons as have been explained heretofore with regard to claim 12. The Markham reference teaches printhead pre-warming operation that avoids any abrupt changes in pre-warming during the printing of the various segments of a print swath. Ceasing generation of the pre-warming signal during printing of the print swath after printing the initial segment constitutes such an abrupt change (i.e. a transition from pre-warming to no pre-warming). Thus, the Markham reference teaches the opposite of this limitation of claim 27.

Therefore, for the reasons discussed herein, the applied references do not teach or suggest

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all of Applicants' claim limitations, and thus the rejection is improper at least for this reason and should be withdrawn.

Furthermore, the Office has not established a *prima facie* case of obviousness at least because there is no articulated reason with some rational underpinning that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. For similar reasons as have been explained heretofore with regard to claim 12, the Markham reference teaches away from modifying the Kao and Anderson references in the manner recited in claim 27. Such modification would be obvious only by impermissibly using the Applicants' disclosure as a blueprint or in hindsight for the rejection. Therefore, because the Office has not provided an articulated reason with some rational underpinning to combine the prior art elements in the manner claimed, it is improper to combine the Kao, Anderson, and Markham references, and the rejection under 103(a) should be withdrawn.

Applicants respectfully traverse the Office's assertion that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the features recited in the claims of Applicants' invention. Such could be possible only in hindsight and in light of Applicants' teachings. Therefore, the rejection is improper at least for this reason and should be withdrawn.

Claim 33 has been rejected under 35 USC §103(a), as being unpatentable over U.S. patent application publication 2002/0018086 to Kao et al. ("Kao") in view of U.S. patent 6,808,243 to Markham et al. ("Markham") and U.S. patent application publication 2002/0145645 to Aono et al. ("Aono"). Applicants respectfully traverse the rejection and request reconsideration.

The rejection of independent claim 33 is respectfully traversed for at least the following reasons. Claim 33 recites:

"33. (Currently amended) A printing system, comprising:
an inkjet printhead having plural portions each having an ink-ejecting nozzle;

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plural heater elements each associated with one of said plural portions to pre-warm ink dispensed by the nozzle of said associated portion in response to a pre-warming signal; and a controller configured to

analyze an upcoming print swath to determine which of said plural portions are required to eject ink in order to print the swath in accordance with a predefined selection criteria different from the upcoming print swath, and

supply the pre-warming signal to one or more heater elements of only the portions required to eject ink to print the swath in accordance with the predefined selection criteria wherein particular ones of the plural portions are configured to eject a particular color ink, and wherein the selection criteria specifies a subset of the particular plural portions to be used to print the swath." (emphasis added)

The Office has not established a *prima facie* case of obviousness at least because the applied references do not teach or suggest all of Applicants' claim limitations.

With regard to the limitation of determining which portions of the printhead are required to eject ink in order to print the swath in accordance with a predefined selection criteria, the Office admits that the Kao reference does not teach this limitation (Office Action, p.16). The Office does not take the position that the Aono reference teaches this limitation, and it is believed that the Aono does not teach any such limitation. However, the Office takes the position that the Markham reference teaches this limitation at col. 2, lines 40-45 and Fig. 2. Applicants respectfully disagree. The cited portion of the Markham reference appears merely to disclose sensing an ambient temperature around the printhead, and setting a threshold for the ambient temperature that determines whether or not pre-warming should be performed. There is no disclosure in the Markham reference that the threshold or the ambient temperature determines which of the plural portions of the printhead are required to eject ink in order to print the swath. The most the Markham reference appears to suggest, *arguendo*, is that the data in the print swath determines which individual heater elements of the printhead are required to eject ink to print the swath. However, using data in the print swath as a selection criteria does not teach or suggest using a predefined selection criteria different from the upcoming print swath to determine which of the plural portions of the printhead are required to eject ink in order to print the swath, as recited in claim 33.

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Therefore, for the reasons discussed herein, the applied references do not teach or suggest all of Applicants' claim limitations, and thus the rejection is improper at least for this reason and should be withdrawn.

Furthermore, the Office has not established a *prima facie* case of obviousness at least because there is no articulated reason with some rational underpinning that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. The Office states that the references can be combined together "for the purposes of providing a predetermined increment of heat to a heating element of a printhead [Markham et al. (9243') Abstract] and for the purposes of when cleaning a wiping blade there will not be left remnant of ink [Aono et al. (2002/0145645) Paragraph 70 lines 7-10]" (Office Action, p.17). Applicants believe that this reason is merely a conclusory statement of generalized advantages and convenient assumptions and thus lacks the rational underpinning required for validly combining the references. For example, neither the claim 33 nor any portion of the present application is directed to cleaning wiping blades. Consequently, this rationale impermissibly uses the Applicant's disclosure as a blueprint or in hindsight for the rejection. Because the Office has not provided an articulated reason with some rational underpinning to combine the prior art elements in the manner claimed, it is improper to combine the references and the rejection under 103(a) should be withdrawn.

Applicants respectfully traverse the Office's assertion that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the features recited in the claims of Applicants' invention. Such could be possible only in hindsight and in light of Applicants' teachings. Therefore, the rejection is improper at least for this reason and should be withdrawn.

Claim 34 has been rejected under 35 USC §103(a), as being unpatentable over U.S. patent application publication 2002/0018086 to Kao et al. ("Kao") in view of U.S. patent 6,808,243 to Markham et al. ("Markham"). Applicants respectfully traverse the rejection and

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request reconsideration.

The rejection of independent claim 34 is respectfully traversed for at least the following reasons. Claim 34 recites:

“34. (Currently amended) A printing system, comprising:
an inkjet printhead having plural portions each having an ink-ejecting nozzle;
plural heater elements each associated with one of said plural portions to pre-warm ink dispensed by the nozzle of said associated portion in response to a pre-warming signal; and
a controller configured to
analyze an upcoming print swath to determine which of said plural portions are required to eject ink in order to print the swath in accordance with a predefined selection criteria, and
supply the pre-warming signal to one or more heater elements of only the portions required to eject ink to print the swath in accordance with the predefined selection criteria, wherein the selection criteria specifies an event after which the controller stops supplying the pre-warming signal to the heater elements of the portions required to eject the ink to print the swath during the printing of the swath.” (emphasis added)

The Office has not established a *prima facie* case of obviousness at least because the applied references do not teach or suggest all of Applicants' claim limitations.

With regard to the limitation of the controller being configured to stop supplying the pre-warming signal to the heater elements of the portions of the printhead required to eject the ink to print the swath, the Office admits that the Kao reference does not teach this limitation, but takes the position that the Markham reference teaches this limitation. Applicants respectfully disagree, for similar reasons as have been explained heretofore with regard to claim 12. The Markham reference teaches printhead pre-warming operation that avoids any abrupt changes in pre-warming during the printing of the print swath. Ceasing generation of the pre-warming signal during printing of the print swath constitutes such an abrupt change (i.e. a transition from pre-warming to no pre-warming). Thus, the Markham reference teaches the opposite of this limitation of claim 34.

Therefore, for the reasons discussed herein, the applied references do not teach or suggest all of Applicants' claim limitations, and thus the rejection is improper at least for this reason and should be withdrawn.

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Furthermore, the Office has not established a *prima facie* case of obviousness at least because there is no articulated reason with some rational underpinning that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. For similar reasons as have been explained heretofore with regard to claim 12, the Markham reference teaches away from modifying the Kao reference in the manner recited in claim 34. Such modification would be obvious only by impermissibly using the Applicants' disclosure as a blueprint or in hindsight for the rejection. Therefore, because the Office has not provided an articulated reason with some rational underpinning to combine the prior art elements in the manner claimed, it is improper to combine the Kao and Markham references, and the rejection under 103(a) should be withdrawn.

Applicants respectfully traverse the Office's assertion that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the features recited in the claims of Applicants' invention. Such could be possible only in hindsight and in light of Applicants' teachings. Therefore, the rejection is improper at least for this reason and should be withdrawn.

Conclusion

Attorney for Applicants has reviewed each one of the cited references made of record and not relied upon, and believes that the claims presently on file in the subject application patentably distinguish thereover, either taken alone or in combination with one another.

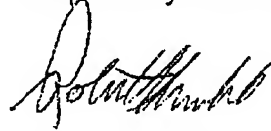
Therefore, all claims presently on file in the subject application are in condition for immediate allowance, and such action is respectfully requested. If it is felt for any reason that direct communication with Applicant's attorney would serve to advance prosecution of this case to finality, the Examiner is invited to call the undersigned Robert C. Sismilich, Esq. at the below-listed telephone number.

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**AUTHORIZATION TO PAY AND PETITION
FOR THE ACCEPTANCE OF ANY NECESSARY FEES**

If any charges or fees must be paid in connection with the foregoing communication (including but not limited to the payment of an extension fee or issue fees), or if any overpayment is to be refunded in connection with the above-identified application, any such charges or fees, or any such overpayment, may be respectively paid out of, or into, the Deposit Account No. 08-2025 of Hewlett-Packard Company. If any such payment also requires Petition or Extension Request, please construe this authorization to pay as the necessary Petition or Request which is required to accompany the payment.

Respectfully submitted,



Robert C. Sismilich
Reg. No. 41,314
Attorney for Applicant(s)
Telephone: (941) 677-6015

Date: 10/5/07

Hewlett-Packard Company
Intellectual Property Administration
P. O. Box 272400
Fort Collins, CO 80527-2400